

**Notice of Allowability**

Application No.

10/074,564

Examiner

Brook Kebede

Applicant(s)

TODD ET AL.

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 21 April 2005.
2. ☒ The allowed claim(s) is/are 1,6-26,55-68 and 72-75.
3. ☒ The drawings filed on 11 February 2002 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 8/22/03;1/31/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

*Brook Kebede*  
BROOK KEBEDE  
PATENT EXAMINER



## DETAILED ACTION

### *Information Disclosure Statement*

1. The information disclosure statement (IDS) submitted on August 22, 2003 was filed before the mailing date of the Final Office action of January 25, 2005. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner and a copy of PTO-1449 is attached hereto.
2. The information disclosure statement filed on January 31, 2005 ( or certificate mailing date of January 26, 2005) fails to comply with 37 CFR 1.97(d) because it lacks the fee set forth in 37 CFR 1.17(p). It has been placed in the application file, but the information referred to therein has not been considered.

### EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Joseph J. Mallon on April 28, 2004.

4. The application has been amended as follows:

#### **In the claims:**

In claim 1, lines 6-7, change "the Si-containing" to --the **amorphous** Si-containing--.

In claim 6, line 1, change "the Si-containing" to --the **amorphous** Si-containing--.

In claim 9, line 2, change "the Si-containing" to --the **amorphous** Si-containing--.



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In claim 10, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 11, line 2, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 14, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 18, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 19, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 19, lines 2-3, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 22, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 25, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 55, line 5, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 55, line 9, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 55, line 10, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 59, line 5, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 59, line 9, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 60, line 5, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 62, line 5, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 63, line 1, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 64, lines 1-2, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 64, line 3, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 72, line 6, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 72, line 7, change “the Si-containing” to --the **amorphous** Si-containing--.

In claim 73, line 6, change “the Si-containing” to --the **amorphous** Si-containing--.



***Allowable Subject Matter***

5. Claims 1, 6-26, 55-68 and 72-75 are allowed over prior art of record.

***Reasons for Allowance***

6. The following is an examiner's statement of reasons for allowance:

The instant application claimed invention is allowed in view of the Terminal Disclaimer that was filed on March 22, 2005. In addition, the prior art of record neither anticipates nor renders obvious the claimed subject matter of the instant application as a whole either taken alone or in combination, in particular, prior art of record does not teach "depositing an amorphous Si-containing film onto the substrate, the amorphous Si-containing film having a thickness in the range of 10 Å to 150 Å and a film surface roughness that is greater than the substrate surface roughness by an amount of about 5 Å rms or less, over a surface area of about one square micron or greater," as recited in claims 1, 59, 60 and 62 respectively, "depositing an amorphous Si-containing film onto the substrate, the amorphous Si-containing film having a thickness in the range of 10 Å to 150 Å and a film surface roughness that is greater than the substrate surface roughness by an amount of about 5 Å rms or less, over a surface area of about one square micron or greater; depositing an oxide layer directly onto the amorphous Si-containing film; and annealing the amorphous Si-containing film to form a plurality of quantum dots," as recited in claim 55, "depositing a Si-containing film onto the substrate, the Si-containing film having a thickness in the range of 10 Å to 150 Å and a film surface roughness that is greater than the substrate surface roughness by an amount of about 5 Å rms or less, over a surface area of about one square micron or greater; and depositing a doped Si-containing layer directly onto the Si-containing film; wherein the Si-containing film is deposited directly onto a



dielectric material,” as recited in claim 56, “depositing a Si-N film onto the substrate, the Si-N film having a thickness in the range of 10 Å to 150 Å and a film surface roughness that is greater than the substrate surface roughness by an amount of about 5 Å rms or less, over a surface area of about one square micron or greater,” as recited in claim 65, “depositing a continuous amorphous Si-containing film having a thickness of less than about 100 Å and a surface area of about one square micron or larger onto the substrate by thermal chemical vapor deposition; depositing an oxide layer over the amorphous Si-containing film; and annealing the amorphous Si-containing film to form a plurality of quantum dots,” as recited in claim 72, and “depositing a continuous amorphous Si-containing film having a thickness of less than about 100 Å and a surface area of about one square micron or larger onto the substrate by thermal chemical vapor deposition; and depositing a doped Si-containing layer directly onto the amorphous Si-containing film,” as recited in claim 73.

Claims 6-26, 57, 58, 61, 63, 64, 66-68, 74, and 75 are also allowed as being directly or indirectly dependent of the allowed independent base claim.

### ***Conclusion***

7. Any comments considered necessary by applicants must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled “Comments on Statement of Reasons for Allowance.”



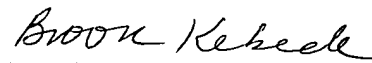
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*Correspondence*

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Olik Chaudhuri can be reached on (571) 272-1855. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Brook Kebede  
Patent Examiner  
Art Unit 2823

BK  
April 28, 2005